



Curriculum Vitae

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Since April 2008 I am working as environmental consultant at Melica with R&D, testing struvite precipitation and mineral adsorption methods for product and technology development together with an innovation company. I am also working with others in all kind of issues related to ecological sanitation, decentralized sustainable wastewater solutions, diverting toilets, etc. Having 15 years of experience in teaching, supervising at university level, I am also working with education or education related projects in the field of my expertise (see below).

Education:

- 2005 in May **PhD degree in Applied Environmental Science**, with the dissertation: "Urine processing for efficient nutrient recovery and reuse in agriculture" (available as pdf file at www.melica.se/zsofia.htm).
- 2000 –2005 PhD student at the Dept. of Applied Environmental Science, Göteborg University. During the 5 years of PhD education I was regularly teaching and examining on the Department's different courses and supervising students in their Master Thesis or special projects.
- 1997-1998 Supplementary course to take my **MSc degree in Environmental Science**, at the Dept. of Applied Environmental Science, Göteborg University.
- 1992-1993 One-year specialization for natural scientists in the field of Environmental and Health Protection, at the Dept. of Applied Environmental Science, Göteborg University.
- 1989-1991 Biomedical technician education, at the Fac. of Medicine, Göteborg University, **BSc degree in Medical microbiology/virology**.
- 1987-1989 In 1987 I left my home country (Romania, Ceausescu's dictatorship) and arrived in Sweden as a political refugee. During the period 1987-1989 I

studied Swedish language and made the compulsory exams to be qualified for entering higher education in Sweden.

1981-1985

Chemistry and Physics at Babes-Bolyai University in Cluj, Romania.
BSc. degree in Inorganic Chemistry in the field of Crystallography.

Working experience:

2008-2009

R&D, laboratory and pilot testing of SplitBox[®] and SplitBox-Agri[®] in co-operation with Split Vision Development AB, Ängelholm, Sweden. Results presented at two international conferences. In May 2009, Vancouver, Canada: International Conference on Nutrient Recovery from Wastewater Streams and in September, Berlin, Germany: Baltic 21 Conference on Phosphorus Recycling and Good Agricultural Management Practice.

Supervisor for two M. Sc. thesis works at Göteborg University, Dept. of Plant and Environmental Sciences, related to toilet pollution of marine environment originated from boat toilets.

2005-2008

Directly after my dissertation and until my employment at Melica I was working at Göteborg University, Dept. of Plant and Environmental Sciences, as a researcher (80 % of time) with development and testing of the struvite precipitation and zeolite adsorption methods, together with Split Vision Development AB (an innovation company in Sweden specialized on new system developments for sustainable management of waste, wastewater and energy from domestic residences).

I was also a part-time (20%) university lecturer, supervisor and examiner for several MSc thesis's in the field of sustainable sanitation. In addition to water and wastewater issues, I also hold lectures, seminars and supervised in the following fields: Agenda 21, sustainable development, eutrophication and agriculture, environmental policy in EU, enlargement and EU, environment in Eastern Europe. Besides the department's environmental education program I was also lecturing, supervising and examining students from the Faculty of Education at Göteborg University in the program called "Learning for Sustainable Development".

1998 –2000

I was working as a research project associate in a 2 year long project titled: "Nitrogen adsorption to minerals, phosphorus recovery by crystallization and nutrient concentration by freezing of human urine. Testing the fertilizing value of the products with pot trials on cereals". The project was in cooperation with the Dept. of Geology (Dr. Docent Bo Lind), the Inst. of Botany (Dr. Göran Wallin) and the Dept. of Applied Environmental Science (myself), all from the Göteborg University

1994 -1998

During this period I had several projects ongoing all in the academic world:

One year project job as project coordinator at the Dept. of Applied Environmental Science, Göteborg University, aiming to develop international contacts for co-operation in the field of environmental education and research with Eastern European countries (countries from

the former Soviet Union). This project resulted in an intensive contact, several visits and a written report over water pollution and wastewater management issues in Budapest Region, Hungary.

In 1996 I was working (3 months) as visiting lecturer and supervisor at the Central European University, Dept. of Environmental Sciences, Budapest, Hungary. Under the rest of 1996 I was working as guide and educator at Ekocentrum (Scandinavia's biggest exhibition and education centre), Göteborg.

During the whole period I was also working as lecturer at the Dept. of Applied Environmental Science, (as before), and as lecturer and supervisor at the Center for Russian and Eastern European studies, at the Göteborg University, in the course on "Environmental problems in Russia and Eastern Europe". I was also an invited lecturer at Kristianstad High school, in the field of environmental issues in Eastern Europe and wastewater problems in Danube river basin.

Summer 1994

I was working as lecturer at the following Summer Courses, at the Göteborg University:

- "Environmental science, an introduction"

- "Environmental pollution in soil, air and water"

My specialty was the water environment (freshwater and marine environments), drinking water and wastewater problems.

Summer 1991

I was working as biomedical technician at the Sahlgrenska University Hospital, in the Laboratory of Virology, Göteborg.

1988-1989

In parallel with the very first Swedish language courses I was working at the Greenpeace main office in Göteborg, as office employee.

Publications:

Note: My name was Zsofia Ban until 2004, when I've got married and changed my name to Ganrot.

Scientific publications:

Ganrot, Zs., Wallin, G., Dave, G., Nilsson, E., Li, B. (2009). Plant availability of P recovered as solids from human urine compared to two commercial fertilizers and a liquid fertilizer in four substrates tested on *T. aestivum* L. (Under processing in J. of Plant Nutrition and Soil Science)

Ganrot, Zs., Broberg, J., Bydén, S. (2009). Energy efficient nutrient recovery from household wastewater using struvite precipitation and zeolite adsorption techniques. A pilot study in Sweden. Peer-reviewed article in: Achley, K., Mavinic, D., Koch, F. (eds): International Conference on Nutrient Recovery from Wastewater Streams. IWA Publishing, 511-521.

Ganrot, Zs., Slivka, A., Dave, G. (2008) Nutrient recovery from human urine using pre-treated zeolite and struvite precipitation in combination with freezing-thawing and plant availability tested on common wheat. CLEAN, 36(1), 45-52.

Ganrot, Zs., Dave, G., Nilsson, E., Li, B. (2007). Plant availability of nutrients recovered as solids from human urine tested in climate chamber on *Triticum aestivum* L. *Bioresource Technology* 98, 3122-3129

Ganrot, Zs., Dave, G., Nilsson, E. (2007). Recovery of N and P from human urine by freezing, struvite precipitation and adsorption to zeolite and active carbon. *Bioresource Technology* 98, 3112-3121.

Ganrot, Zs. (PhD Thesis, May 2005). Urine processing for efficient nutrient recovery and reuse in agriculture, ISBN 91 88376 29X, Göteborg University.

Ban, Zs., Dave G. (2004). Laboratory studies on recovery of N and P from human urine through struvite crystallization and zeolite adsorption. *Environmental Technology* 25, 111-121.

Adamsson M., Ban, Zs., Dave G. (2003). Sustainable utilization of human urine in urban areas – practical experiences. Peer reviewed paper published in Conf. Proceedings: 2nd International Symposium on ecological sanitation, Lübeck, Germany, April 2003, 643-650.

Lind, B-B., Ban, Zs., Bydén, S. (2001). Volume reduction and concentration of nutrients in human urine. *Ecological Engineering* 16, 561-566.

Lind, B-B., Ban, Zs., Bydén, S. (2000). Nutrient recovery from human urine by struvite crystallization with ammonia adsorption on zeolite and wollastonite. *Bioresource Technology* 73, 169-174.

Ban, Zsófia (MSc. Thesis, 1998): Nutrient recovery from human urine – a concentration and crystallization process. Göteborg University/ Dept. of Applied Environmental Science and Dept. of Geology, pp 1-60.

Other publications:

Ban, Zsófia (1995): Vattenförsörjning och avloppshantering i Budapest-området. (Rapport nr 1), Inst. för Tillämpad miljövetenskap, Göteborgs Universitet, ISSN 1400-9323.

Contributing author in:

Anna Richert Stintzing (ed), (2007): Urine diverting toilets in climates with cold winters. Technical considerations and the reuse of nutrients with a focus on legal and hygienic aspects. Women in Europe for a Common Future (WECF). PDF file available at www.wecf.eu.

Hedenus F and Larsson A. (eds). (2006): Towards a “Smart Growth” Strategy for Sustainable Development. *EPSD (European Panel on Sustainable Development)*, Report no 3., pp 46.

References:

- Since 2005, Jan Broberg, R&D executive, Split Vision Development AB, Tel.: 0705-513386
- Since 1999, Göran Dave, prof., Dept. of Plant and Environmental Sciences, Göteborg University, Tel.: 031-7863776
- Since 2006, Håkan Pleijel, prof., Inst. Växt och Miljövetenskaper, Göteborg University, Tel.: 031-7862532
- 1994-2008, Mikael Olsson, lector, Dept. of Plant and Environmental Sciences, Göteborg University, Tel.: 031.7863774
- 1994-1998, Bo Lind, R&D executive, SGU, Tel.: 031-7786566
- 1996, Eva Lundgren, Marketing executive, Ekocentrum, Tel.: 031-7050746
- 1996, Anders Lund, Guide & Education, Ekocentrum, Tel.: 031-7050743

Other skills and interests:

Languages:

Hungarian – is my mother tongue (perfectly speaking and writing)

Swedish - almost perfectly speaking and writing

English - very good speaking and writing

Romanian - almost perfectly speaking and writing

Russian - can read, write and speak, but I forgot a lot since 1980...

Japanese - a little (can write and read with hiragana, katakana, and some 200 kanji's by now. My language studies are ongoing).

Interests:

I am spending most of my free time with my family and friends.

* Cultural activities are very central in my life, likewise intensive literature reading (fiction and non-fiction, however, my favorite genre is good old sci-fi).

* I am a committee member of "Center for Ecological Technology", an organization for promoting, informing and working for a better understanding of new, sustainable and ecological technologies.

* I was intensively practicing Aikido between 1996 and 2004 but unfortunately, I could not continue because of health related issues. Nevertheless, I am still very interested and updated on all happenings in the world of Aikido. Nowadays I am practicing Tai Ji and I am training Pilates.

* I love to travel, to meet other cultures and see historical places or beautiful wildlife sanctuaries (like to e.g. New Zealand, China, Japan, Kenya and USA and all over Europe).

* Much of my interests are related to Asia, especially the arts, culture, history and society of Japan. Since 2003, I am studying the Japanese language (on a regular basis) at a college and recently at Göteborg University.